

Amendments to the Specification:

Please add the following new paragraph after the title of the application beginning at page 1, line 1:

Cross-Reference to Related Applications

-- This application is a continuation of U. S. Application Serial No. 09/428,082, filed October 22, 1999, which claims the benefit of United States Provisional application 60/105,371, filed October 23, 1998, which are incorporated by reference herein. --

Please replace the following paragraphs and table with the following rewritten paragraphs and table:

At page 13, lines 16-19:

Figure 5 shows a synthetic scheme for the preparation of PEGylated peptide 19 (SEQ ID NO: 3) as prepared through intermediates having SEQ ID NOS: 1128 through 1131, respectively.

Figure 6 shows a synthetic scheme for the preparation of PEGylated peptide 20 (SEQ ID NO: 4) as prepared through intermediates having SEQ ID NOS: 1132 and 1133, respectively.

At page 16, lines 23-25:

Figures 23A, 23B, and 23C show the nucleotide and amino acid sequences (SEQ ID NOS: 1063 and 1064) of the Fc-VEGF antagonist fusion molecule described in Example 6 hereinafter.

At page 58, Table 20:

Table 20—Additional Exemplary Pharmacologically Active Peptides

Sequence/structure	SEQ ID NO:	Activity
VEPNCDIHVMWEWECFERL	1027	VEGF-antagonist
GERWCFDGPLTWVCGEES	1084 398	VEGF-antagonist
RGWVEICVADDNGMCVTEAQ	1085	VEGF-antagonist
GWDECDVARMWEWECFAGV	1086	VEGF- antagonist
GERWCFDGPRAWVCGWEI	501	VEGF- antagonist
EELWCFDGPRAWVCGYVK	502	VEGF- antagonist
RGWVEICAADDYGRCLTEAQ	1031	VEGF- antagonist
RGWVEICESDVWGRCL	1087	VEGF- antagonist
RGWVEICESDVWGRCL	1088	VEGF- antagonist
GGNECDIARMWEWECFERL	1089	VEGF- antagonist
RGWVEICAADDYGRCL	1090	VEGF-antagonist

CTTHWGFTLC	1028	MMP inhibitor
CLRSGXGC	1091	MMP inhibitor
CXXHWGFXXC	1092	MMP inhibitor
CXPXC	1093	MMP inhibitor
CRRHWGFEFC	1094	MMP inhibitor
STTHWGFTLS	1095	MMP inhibitor
CSLHWGFWWC	1096	CTLA4-mimetic
GFVCSGIFAVGVGRC	125	CTLA4-mimetic
APGVRLGCAVLGRYC	126	CTLA4-mimetic
LLGRMK	105	Antiviral (HBV)
ICVVQDWGHHRCTAGHMANLTSHASAI	127	C3b antagonist
ICVVQDWGHHRCT	128	C3b antagonist
CVVQDWGHHAC	129	C3b antagonist
STGGFDDVYDWARGVSSALTTLVATR	185	Vinculin-binding
STGGFDDVYDWARRVSSALTTLVATR	186	Vinculin-binding
SRGVNFSEWLYDMSAAMKEASNVFPSRRSR	187	Vinculin-binding
SSQNWDMEAGVEDLTAAMLGLLSTIHSSSR	188	Vinculin-binding
SSPSLYTQFLVNYESAATRIQDLIASRPSR	189	Vinculin-binding
SSTGWVDLLGALQRAADATRTSIPPSLQNSR	190	Vinculin-binding
DVYTKKELIECARRVSEK	191	Vinculin-binding
EKGSYYPGSGIAQFHIDYNNVS	192	C4BP-binding
SGIAQFHIDYNNVSSAEGWHVN	193	C4BP-binding
LVTVEKGSYYPGSGIAQFHIDYNNVSSAEGWHVN	194	C4BP-binding
SGIAQFHIDYNNVS	195	C4BP-binding
LLGRMK	279	anti-HBV
ALLGRMKG	280	anti-HBV
LDPAFR	281	anti-HBV
CXXRGDC	322	Inhibition of platelet aggregation
RPLPPLP	323	Src antagonist
PPVPPR	324	Src antagonist
XFXDXWXXLXX	325	Anti-cancer (particularly for sarcomas)
KACRRLFGPVDSSEQLSRDCD	326	p16-mimetic
RERWNFDFTETPLEGDFAW	327	p16-mimetic
KRRQTSMTDFYHSKRRLIFS	328	p16-mimetic
TSMTDFYHSKRRLIFSKRKP	329	p16-mimetic
RRLIF	330	p16-mimetic
KRRQTSATDFYHSKRRLIFSRSRQIKIWFQNRRMKWKK	331	p16-mimetic
KRRLIFSRSRQIKIWFQNRRMKWKK	332	p16-mimetic
Asn Gln Gly Arg His Phe Cys Gly Gly Ala Leu Ile His Ala Arg Phe Val Met Thr Ala Ala Ser Cys Phe Gln	498	CAP37 mimetic/LPS binding
Arg His Phe Cys Gly Gly Ala Leu Ile His Ala Arg Phe Val Met Thr Ala Ala Ser Cys	499	CAP37 mimetic/LPS binding
Gly Thr Arg Cys Gln Val Ala Gly Trp Gly Ser Gln Arg Ser Gly Gly Arg Leu Ser Arg Phe Pro Arg Phe Val Asn Val	500	CAP37 mimetic/LPS binding
WHWRHRIPLQLAAGR	1097	carbohydrate (GD1 alpha) mimetic
LKTPRV	1098	β 2GPI Ab binding

NTLKTPRV	1099	β2GPI Ab binding
NTLKTPRVGCG	1100	β2GPI Ab binding
KDKATF	1101	β2GPI Ab binding
KDKATFGCHD	1102	β2GPI Ab binding
KDKATFGCHDGC	1103	β2GPI Ab binding
TLRVYK	1104	β2GPI Ab binding
ATLRVYKGG	1105	β2GPI Ab binding
CATLRVYKGG	1106	β2GPI Ab binding
INLKALAALAKKIL	1107	Membrane-transporting
GWT	NR	Membrane-transporting
GWTLNSAGYLLG	1108	Membrane-transporting
GWTLNSAGYLLGKINLKALAALAKKIL	1109	Membrane-transporting

At page 109, lines 3-15:

The Fc portion of the molecule was generated in a PCR reaction with pFc-A3 using the primers

1216-52 AAC ATA AGT ACC TGT AGG ATC G

1798-17 AGA GTA AGT ACC TCC ACC ACC ACC TCC ACC TTT ACC CGG
AGA CAG GGA GAG GCT CTT CTG C

which are SEQ ID NOS: 398369 and 399, respectively. The oligonucleotides 1798-17 and 1798-18 contain an overlap of 61 nucleotides, allowing the two genes to be fused together in the correct reading frame by combining the above PCR products in a third reaction using the outside primers, 1216-52 and 1798-19.

At page 113, lines 22-23:

The nucleotide and amino acid sequences (SEQ ID NOS: —21 and —22, respectively) of the fusion protein are shown in Figure 16.

At page 114, lines 20-30 and page 115, lines 1-5:

Fc-TNF-α inhibitors. A DNA sequence coding for the Fc region of human IgG1 fused in-frame to a monomer of the TNF-α inhibitory peptide was constructed using standard PCR technology. The Fc and 5 glycine linker portion of the molecule was generated in a PCR reaction with DNA from the Fc-EMP fusion strain #3718 (see Example 3) using the sense primer 1216-52 and the antisense primer 2295-89 (SEQ ID NOS:

1112369 and 11131112, respectively). The nucleotides encoding the TNF- α inhibitory peptide were provided by the PCR primer 2295-89 shown below:

1216-52 AAC ATA AGT ACC TGT AGG ATC G
2295-89 CCG CGG ATC CAT TAC GGA CGG TGA CCC AGA GAG GTG TTT TTG TAG
 TGC GGC AGG AAG TCA CCA CCA CCT CCA CCT TTA CCC

The oligonucleotide 2295-89 overlaps the glycine linker and Fc portion of the template by 22 nucleotides, with the PCR resulting in the two genes being fused together in the correct reading frame.

At page 117, lines 21-30 and page 118, lines 1-8:

Fc-IL-1 antagonist. A DNA sequence coding for the Fc region of human IgG1 fused in-frame to a monomer of an IL-1 antagonist peptide was constructed using standard PCR technology. The Fc and 5 glycine linker portion of the molecule was generated in a PCR reaction with DNA from the Fc-EMP fusion strain #3718 (see Example 3) using the sense primer 1216-52 and the antisense primer 2269-70 (SEQ ID NOS: 1112369 and 1118, respectively). The nucleotides encoding the IL-1 antagonist peptide were provided by the PCR primer 2269-70 shown below:

1216-52 AAC ATA AGT ACC TGT AGG ATC G
2269-70 CCG CGG ATC CAT TAC AGC GGC AGA GCG TAC GGC TGC CAG TAA CCC GGG GTC
 CAT TCG AAA CCA CCA CCT CCA CCT TTA CCC

The oligonucleotide 2269-70 overlaps the glycine linker and Fc portion of the template by 22 nucleotides, with the PCR resulting in the two genes being fused together in the correct reading frame.

At page 121, lines 4-15:

Fc-VEGF Antagonist. A DNA sequence coding for the Fc region of human IgG1 fused in-frame to a monomer of the VEGF mimetic peptide was constructed using standard PCR technology. The templates for the PCR reaction were the pFc-A3 plasmid and a synthetic VEGF mimetic peptide gene. The synthetic gene was assembled by annealing the following two oligonucleotides primer (SEQ ID NOS: 11201110 and 11211111, respectively):

2293-11 GTT GAA CCG AAC TGT GAC ATC CAT GTT ATG TGG GAA TGG GAA
 TGT TTT GAA CGT CTG
2293-12 CAG ACG TTC AAA ACA TTC CCA TTC CCA CAT AAC ATG GAT GTC
 ACA GTT CGG TTC AAC

At page 121, lines 17-18:

The two oligonucleotides anneal to form the following duplex encoding an amino acid sequence shown below (SEQ ID NOS: 11221113 and 1114):

At page 121, lines 28-29:

This duplex was amplified in a PCR reaction using 2293-05 and 2293-06 as the sense and antisense primers (SEQ ID NOS: 11251122 and 11261123).

At page 121, lines 30-34:

The Fc portion of the molecule was generated in a PCR reaction with the pFc-A3 plasmid using the primers 2293-03 and 2293-04 as the sense and antisense primers (SEQ ID NOS: 11231120 and 11241121, respectively). The full length fusion gene was obtained from a third PCR reaction using the outside primers 2293-03 and 2293-06. These primers are shown below:

At page 122, lines 22-31:

VEGF antagonist -Fc. A DNA sequence coding for a VEGF mimetic peptide fused in-frame to the Fc region of human IgG1 was constructed using standard PCR technology. The templates for the PCR reaction were the pFc-A3 plasmid and the synthetic VEGF mimetic peptide gene described above. The synthetic duplex was amplified in a PCR reaction using 2293-07 and 2293-08 as the sense and antisense primers (SEQ ID NOS: 11271124 and 11281125, respectively).

The Fc portion of the molecule was generated in a PCR reaction with the pFc-A3 plasmid using the primers 2293-09 and 2293-10 as the sense and antisense primers (SEQ ID NOS: 11291126 and 11301127, respectively).

At page 123, lines 27-32 and page 124, lines 1-22:

Fc-MMP inhibitor. A DNA sequence coding for the Fc region of human IgG1 fused in-frame to a monomer of an MMP inhibitory peptide was constructed using standard PCR technology. The Fc and 5 glycine linker portion of the molecule was generated in a PCR reaction with DNA from the Fc-TNF- α inhibitor fusion strain #4544 (see Example 4) using the sense primer 1216-52 and the antisense primer 2308-67 (SEQ ID NOS: 1112369 and 11311115, respectively). The nucleotides encoding the MMP inhibitor peptide were provided by the PCR primer 2308-67 shown below:

1216-52 AAC ATA AGT ACC TGT AGG ATC G

2308-67 CCG CGG ATC CAT TAG CAC AGG GTG AAA CCC CAG TGG GTG GTG
CAA CCA CCT CCA CCT TTA CCC

The oligonucleotide 2308-67 overlaps the glycine linker and Fc portion of the template by 22 nucleotides, with the PCR resulting in the two genes being fused together in the correct reading frame.

At page 124, lines 22-35:

MMP Inhibitor-Fc. A DNA sequence coding for an MMP inhibitory peptide fused in-frame to the Fc region of human IgG1 was constructed using standard PCR technology. The Fc and 5 glycine linker portion of the molecule was generated in a PCR reaction with DNA from the Fc-TNF- α inhibitor fusion strain #4543 (see Example 4). The nucleotides encoding the MMP inhibitory peptide were provided by the sense PCR primer 2308-66, with primer 1200-54 serving as the antisense primer (SEQ ID NOS: 11321116 and 407, respectively). The primer sequences are shown below:

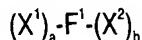
2308-66 GAA TAA CAT ATG TGC ACC ACC CAC TGG GGT TTC ACC CTG TGC
 GGT GGA GGC GGT GGG GAC AAA

1200-54 GTT ATT GCT CAG CGG TGG CA

The two oligonucleotides anneal to form the following duplex encoding an amino acid sequence shown below (SEQ ID NOS: 1113 and 1114):

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A composition of matter of the formula



and multimers thereof, wherein:

F^1 is an Fc domain;

X^1 and X^2 are each independently selected from $-(L^1)_c \cdot P^1$, $-(L^1)_c \cdot P^1 \cdot (L^2)_d \cdot P^2$, $-(L^1)_c \cdot P^1 \cdot (L^2)_d \cdot P^2 \cdot (L^3)_e \cdot P^3$, and $-(L^1)_c \cdot P^1 \cdot (L^2)_d \cdot P^2 \cdot (L^3)_e \cdot P^3 \cdot (L^4)_f \cdot P^4$

P^1 , P^2 , P^3 , and P^4 are each independently randomized NGF binding peptide sequences of pharmacologically active peptides;

L^1 , L^2 , L^3 , and L^4 are each independently linkers; and

a , b , c , d , e , and f are each independently 0 or 1, provided that at least one of a and b is 1 and wherein "peptide" refers to molecules 2 to 40 amino acid and wherein neither X^1 nor X^2 is a native protein.

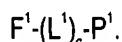
2. (original) The composition of matter of Claim 1 of the formulae



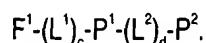
or



3. (original) The composition of matter of Claim 1 of the formula



4. (original) The composition of matter of Claim 1 of the formula



5. (original) The composition of matter of Claim 1 wherein F^1 is an IgG Fc domain.

6. (original) The composition of matter of Claim 1 wherein F^1 is an IgG1 Fc domain.

7. (original) The composition of matter of Claim 1 wherein F^1 comprises the sequence of SEQ ID NO: 2.

8. Claims 8 - 51 (canceled).